Boldt (H. J.)

WITH THE COMPLIMENTS OF THE AUTHOR.

The Operative Treatment for Myo-Fibroma of the Uterus

BY

H. J. BOLDT, M.D.

Professor of Diseases of Women in the New York Post-Graduate Medical School and Hospital; Gynecologist to the German Poliklinik and to St. Mark's Hospital; Consulting Gynecologist to Beth-Israel Hospital, etc., New York

REPRINTED FROM

THE AMERICAN JOURNAL OF OBSTETRICS

Vol. XXVII., No. 6, 1893

NEW YORK

WILLIAM WOOD & COMPANY, PUBLISHERS

1893

presented by the author.

THE OPERATIVE TREATMENT FOR MYO-FIBROMA OF THE UTERUS.[1]

During the fall of 1889, at a meeting of the New York Obstetrical Society at which the subject was discussed, I called attention to the desirability of total extirpation of the fibro-myomatous uterus. Since my first operation of complete hysterectomy, this, with few exceptions, has been my method by choice; and now, venturing to add a quota on the treatment of myo-fibromata of the uterus by this comparatively new operative procedure, I do so with the full realization of my inability to give either a long or favorable statistical table of my own experience, such as one should expect from an author when he advocates something not generally accepted.

It would be interesting to discuss the etiology of these by no means rare neoplasms; space, however, forbids this, and as yet there is nothing definitely decided—the opinions vary. Virchow, for instance, asserts that they are invariably the result of outgrowths from the uterine muscularis in which both vessels and connective tissue are concerned; others, again, believe that these growths arise from a proliferation of the muscularis of the small arteries, etc. My own researches seem to show that both views may in certain cases be correct, both factors being combined. Other views than these are also held.

The operative treatment has doubtless made the greatest advance, and the credit for this is due to the endeavors and publications of August Martin, of Berlin, he being the one who, from the great material at his disposal, has gradually and deliberately worked out a method of operating which many of us are compelled to admit as ideal in this class of cases—viz., removal of the *entire* organ where the neoplasm alone cannot be enucleated.

[1] Read before the American Gynecological Society, May 16th, 1893.

Before we discuss the operative measures it will be well, to prove the justification of an operation at all, to glance momentarily at some of the palliative methods. Very many physicians do not consider the extirpation of myoma a necessary operation in any case; on the other hand, the majority of these palliative measures are minor operative procedures, and should be so considered by every one employing them. The most prominent is galvanism as applied and brought to a scientific and accurate application by Georges Apostoli and our colleague, Dr. Engelmann. The clinical literature [1] on this subject has grown wonderfully, and it is far too voluminous to allow here even a reference to the authors. My own experience does not coincide with that of very many writers. I have been unable to diminish the size of the tumor in any case, though in a number of instances the symptoms caused by the growth have been relieved—that is, the pain and hemorrhage; in others, again, the treatment not only was negative, but the patients gradually became worse. Yet I will say that in an ordinary interstitial myoma, if suitable for the treatment, I would never sanction operation until a trial has been made, say, of at least twenty or thirty applications of the current, to ascertain whether or not we can benefit the patient without resorting to a more radical measure. We must, however, not forget the danger, especially in soft myomata, of producing suppuration in the tumor by the action of the current. Twice I have had an opportunity to observe this in my own practice, and have seen it three times in the practice of others. For submucous myomata and subperitoneal tumors electricity is useless.

Curetting, with intra-uterine applications, so as to destroy the hyperplastic mucosa, is also sufficient to relieve the bleeding and pains in a certain number of cases, but it is impossible for us to pass a curette into the uterine cavity in all such patients. Some cases have also been reported where this treatment brought about serious results—namely, suppuration of the tumor.

The ergot treatment is another therapeutic measure which has been crowned with satisfactory results in isolated instances. We have, however, a certain number of patients, a minor proportion of those afflicted with this neoplasm, to whom no relief can be given except by operation.

[1] A valuable contribution on the action of the current is contributed by Gustav Klein, Zeitschrift für Geburtsh. und Gynäk., Bd. xix., page 174.

The necessity of a capital operation (considering nearly all other forms of treatment as minor operations) also depends very much upon the social position of the patient. We will take two parallel cases, such as we not infrequently meet in practice: An interstitial myoma, about the size of a new-born infant's head, in the posterior wall of the uterus. The patients are each 40 years old, one a woman in good circumstances, the other the wife of a laborer. The former can be treated at her home or in the physician's office two or three times a week by means of electricity or some other method, or may receive no treatment at all: *but she can enjoy rest and all the comforts which money will afford.* The other woman, who is compelled to do all of her own housework and consequently has no time to rest and take life easy, presents to us an entirely different picture. She cannot afford to spend months and years as an invalid. In such case it is essential that something else be done, and that something else is, after we have failed with the ordinary and less hazardous means of treatment, a capital operation. The question arises, What shall the operation be? Oöphorectomy?

In many cases the rapid bringing about of the menopause is sufficient; in other cases the tumor will continue or even commence to grow after this period, or it may die owing to loss of vitality, or softening and suppuration may occur, all of which we must take into consideration; besides, the removal of the appendages does not stop the bleeding in all cases, notably not in submucous tumors. If we have a patient upon whom it is decided to operate, the age of the woman, the consistence of the tumor, its size, whether it produces pressure symptoms, etc., must necessarily guide us as to whether we are justified in merely removing the appendages. The possible malignant degeneration of the endometrium must also be borne in mind. The great majority of patients of course do not require an operation. I have been able to observe, for a greater or less period of time, three hundred and twenty-one patients afflicted with myoma of the uterus sufficient to produce such symptoms as to compel them to seek advice, their ages varying between 18 and 66 years; the majority were between 30 and 40 years. Ninety-six patients who were seen only once or twice, and those in whom the myoma was discovered only incidentally, were not enumerated as "observation cases." Of this entire number it appears

that in only fifty-seven patients was operation ultimately advised by me = 14.45+ per cent.

In a limited number of cases the tumor can be enucleated per vaginam—that is, if the tumor is submucous and is enucleable from its bed, if the portio is sufficiently dilated or dilatable to reach it, and if the size of the tumor is not too great. The smaller submucous myomata, which by efforts of the uterus have already been partly expelled, are most favorable for this procedure. If a myomatous uterus is small enough to be removed per vaginam *in toto*, and the myomata cause severe symptoms, and no method of treatment will relieve the patient except an operation, then vaginal hysterectomy becomes the operation of choice.

Pediculated subperitoneal myomata need no discussion; they are the easiest of all to manage, and after removing such a neoplasm a functionating organ is left. The same object should be sought, however, when removing interstitial myomata; and here the pioneer work of A. Martin cannot be appreciated too highly. Among numerous other myoma operations I have seen Martin enucleate a myoma involving the uterus to such a degree that a considerable portion of the body of this organ was necessarily removed. He had, in fact, after removing the neoplasm, to build up a uterus. The patient recovered without a bad symptom. Admitting that after such operation the organ is crippled, and that the chances are nineteen out of twenty, or even more, that such patient will not conceive and give birth to a child at term, yet it is a source of intense satisfaction to the patient that she is still a woman in the full sense of the word.

It should always be our endeavor to remove the neoplasm only by enucleation, which, if the uterine cavity is not invaded during the operation, gives a very favorable prognosis. Split the capsule, enucleate the tumor, and sew up the bed with buried catgut sutures under the requisite antiseptic precautions. Sometimes two or more fibroids can be removed from the organ in that way. Great care should be taken to have all bleeding stopped by the sutures, and to insure this no method of suture is better than the continuous catgut suture used in tiers.

Constricting the cervix with a rubber ligature while enucleating and sewing is, in my opinion, not to be favored, for the same reasons that it is condemned by many operators in Cesarean section. If the uterine cavity has been invaded by the

operation, one cannot be too careful in the disinfection and in the placing of the sutures, so as to prevent infection from this source.

Another class of patients still remains to be dealt with—namely, those in whom it is necessary to remove the tumor, plus the body of the uterus, in order to give the desired relief. For this numerous methods of procedure have been devised; the best results as to recovery from operation, from the statistics of all cases operated upon, according to my researches, being achieved by the extraperitoneal treatment of the stump, the uterus having been amputated at the cervix. The intraperitoneal method, however, has gained very many friends, and a war between intra- and extraperitoneal treatment of the stump has been waged a long time. Personally I favor the intraperitoneal method, if a choice is to be taken between the two. Byford, of Chicago, introduced the vaginal fixation of the stump, which no doubt has great merit. A. Palmer Dudley, of New York, has in some cases done what he terms intra-extraperitoneal treatment, but I am unable to find wherein it differs materially from the recognized intraperitoneal treatment according to Schröder's method. Why, however, should I discuss the merits between intra- and extraperitoneal treatment, when Martin has placed in our hands an operation which I think is ideal? Independently of Martin's work the entire uterus was removed for myoma by Dr. L. A. Stimson, of New York, in November, 1888. Stimson's method differs from Martin's, in that his aim and main point is to ligate the uterine arteries *first*—which is certainly more surgical—so as to avoid using ligatures *en masse*. For the details I refer to his article on "Some Modifications in the Technique of Abdominal Surgery Limiting the Use of the Ligature *en masse*" in the *Medical News* for July 27th, 1889. Stimson lost two out of about seven complete abdominal hysterectomies for myoma.

An excellent method of operation was brought to the notice of the Society at its last meeting by our member, Dr. Baer; it is an intraperitoneal treatment of the stump, and the results which our colleague attained with his method are so brilliant, and the technique is so rational, that all who share the opinion which Baer has of *complete* extirpation should give his method a trial, and no doubt it will convince many, if not all, in its favor.

Of all intraperitoneal methods this one appeals most strongly to me; and if it should prove, after experience, that the immediate results are equal to total extirpation, then I have no doubt as to its universal adoption.

We have, however, not yet reached the end of our, we may well say, experimental state in fibro-myomata operations. The mortality is still far too great to satisfy us, but we are on the road to bring it to perfection.

From a communication received it appears that Dr. Mary A. Dixon Jones, of Brooklyn, performed the first complete extirpation of the uterus for myoma, to avoid the disagreeable features of either extra- or intraperitoneal treatment of the pedicle, on February 16th, 1888, publishing the case in the New York *Medical Journal*, September 1st, 1888. The patient, who had a multiple fibroid weighing thirteen and one-half pounds, made an uneventful recovery. The combined operation was done. Drs. Polk, Krug, and Edebohls, of New York, are also ardent advocates of this procedure, and their results are encouraging. Dr. Joseph Eastman, of Indianapolis, has the largest statistics of any American operator—seventy-nine complete operations with but eight deaths = only 10.1+ per cent mortality. This comprises his list from the date of his first operation, in August, 1889, until August, 1892, only (private communication). Eastman still prefers total extirpation, which, with the ability to do any kind of abdominal work, and his experience, means unbiassed commendation, based on large experience.

The following comprises the list of cases in my own experience to January 1st, 1893.

Case I.—Mrs. R. Z., æt. 34 years. Menstruation began at 14. When 16 years old she was married, and two years subsequently gave birth to one child. She has never been pregnant since, and has always been in good health until twelve years ago, when her menses, which had been quite regular and in moderate amount, the flow lasting from three to four days, gradually became more profuse. During the past three years the flow has also been irregular, the intermission being sometimes only ten days. She is never entirely free from pain, but during the period it is much increased in severity, so that it is necessary for her to remain in bed, and a part of the time to be under the influence of narcotics.

On examination a nodulated tumor was found, extending two

inches above the umbilicus, the nodules varying in size from a walnut to a hen's egg. On vaginal examination it was found that the cervix was crowded upward and forward, the tumor being in the posterior wall of the uterus. The patient had been under nearly constant treatment for the previous two and one-half years, and naturally demanded that something more radical be done. I decided on doing a hysterectomy, and on May 23d, 1889, the abdominal section was made. A very large incision was necessary to dislodge the tumor from the abdominal cavity. The large, multiple myo-fibroma could not have been enucleated, and so I decided to remove the uterus entirely. Accordingly a rubber ligature was placed below the tumors on the cervix, having the adnexa also above the ligature; the uterus was amputated above the ligature, and the abdominal wound closed. After this the patient was put in position for vaginal hysterectomy, and the vagina, external genitals, etc., being in proper antiseptic condition, the cervix was grasped by a volsella forceps and the bladder separated anteriorly; the cul-de-sac was also opened posteriorly, and two forceps on either side secured the broad ligaments. A few hemostatic forceps were necessary to secure some other smaller bleeding points. After the cervix had been cut out a strip of iodoform gauze was introduced for drainage. Time of operation, from beginning until the patient was ready to go off the table, forty minutes. In twenty-four hours the gauze and all the forceps were removed and fresh gauze again introduced. The average temperature was 99° F. in the axilla for the first four days, the highest being reached on the third day—100.6° F. After the fourth day the temperature remained normal. The vaginal wound was completely closed on the tenth day. On the nineteenth day after the operation the patient was able to be up, and in four weeks from the day of operation she attended to all her household duties with comfort. Only occasionally does the scar trouble her (severe lancinating pains). She is a perfectly well woman, and has not been ill since the removal of the fibro-myomatous uterus.

Case II.—H. McC., æt. 39 years, presented herself with a tumor reaching nearly to the umbilicus. She had undergone treatment for a long time without benefit, and was almost a wreck, suffering agonizing pain constantly and bleeding profusely about half the time. For a long time she had taken morphia to relieve her pain. The fibroid was interstitial and filled

the pelvis, the intense pain being caused by the pressure. Taking everything into consideration, I deemed it best to lose no more time with other methods of treatment, especially as the cervico-uterine canal was so tortuous that an electrode could not be introduced. On July 15th, 1889, the fibromatous uterus was removed as in the previous case. The patient had no acceleration of pulse or temperature, but began on the second day to show symptoms of acute mania; probably the sudden withdrawal of morphia, for which she constantly craved, made this condition much worse. She became so unmanageable that we could not keep her in the hospital and were compelled to transfer her to Bellevue Hospital on the seventh day. The abdominal and vaginal wounds were in excellent condition. I learned subsequently that she died in Bellevue Hospital

Case III.—F. B., æt. 32 years, never pregnant. At the age of 16 years she began to menstruate, at 23 she was married, and a few months later her menstruation began to be more profuse and painful. When 25 years old she began to undergo various kinds of treatment for the uterine fibroid which was diagnosed. In the autumn of 1888 the patient came under my care. The abdomen was filled with a tumor reaching nearly to the umbilicus. Per vaginam it was diagnosed to involve the cervix; its consistence was that usual to a soft myoma. The patient was treated with electricity, receiving sixty applications, without the slightest amelioration of the symptoms, except that the bleeding was very slightly lessened. Operation was now proposed and accepted. On October 20th, 1889, celiotomy was done, and, finding enucleation of the tumor impracticable, the uterus was removed by the combined operation, the steps being similar to those in the previous case, after first tying off the adnexa. The bladder attachment was, however, quite extensive, the tumor involving much of the anterior wall of the uterus. This patient also made an uninterrupted recovery. The highest temperature was reached on the third day—100.2° F. in the axilla. At the end of the third week she left her bed.

Case IV.—L. Z., æt. 31 years, married nine years; never pregnant. Menstruation began at 14; always regular until two years ago, when the flow became more profuse and was accompanied by severe pain; both pain and bleeding increased, and treatment, which was commenced a little more than a year ago, was negative. The tumor extended a hand's breadth above the symphy-

sis, and was considered to be of the so-called mixed variety. A double salpingo-oöphoritis with perimetritis were complicating features. On October 24th, 1889, abdominal panhysterectomy was performed. The highest temperature during convalescence was 100.6° F., pulse 108. The patient was up on the twenty-fifth day, and has since been well.

Case V.—M. B., æt. 22 years, single. Ill for four years, complaining of pain in the back and lower part of abdomen which has been getting worse steadily. The patient is incapacitated from earning a livelihood as seamstress, especially as she was in much greater agony during the flow, which had lately continued from eight to twelve days. Constipation was extreme; a voluntary movement could never be obtained. The tumor, although not very large, filled out the small pelvis completely, which accounts for the negative result from all treatment which the patient received from her attending physician. On November 3d, 1889, abdominal total extirpation was done. With the exception of a small mural abscess, the patient made an uneventful recovery.

Case VI.—R. G., æt. 34 years, married fourteen years; one child thirteen years previous. Symptoms were meno- and metrorrhagia; severe abdominal and lumbar pains, constipation, and frequent micturition. Treatment had been negative. Tumor the size of a large cocoanut. On the left side another fibroid developed between the folds of the broad ligament.

The operation, which took place on November 10th, 1889, was difficult, owing to rigidity of the pelvic floor, and for this reason, after the intraligamentous tumor was freed, a ligature was placed around the cervix and the uterus with myomata was amputated. The cervix was removed per vaginam. The folds of the broad ligament were sewed with a continuous catgut suture. Death on the fourth day from pneumonia complicating chronic nephritis, which latter had already existed prior to operation.

Case VII.—M. F., æt. 40 years, married seventeen years; never pregnant. Nine years pain in abdomen and back; heavy weight in the abdomen; menstruation profuse; fibro-myoma extending above umbilicus. Total abdominal hysterectomy November 30th, 1889. Recovery unusually smooth. The temperature never above 100.2°, pulse 104. Sat up on the twenty-first day.

Case VIII.—M. D., æt. 33 years, married four years; one child twelve years ago. During the past seven years the patient has had meno- and metrorrhagia, and intense abdominal and lumbar pains, which were increased on physical exertion. Treatment had not afforded her relief. A fibro-myoma with salpingitis duplex was diagnosed. The salpingitis was considered to be suppurative, and it was thought that the electricity, which had been used for several months, could be held responsible for that condition to some extent, because the patient's pains in the ovarian regions had been increasing in severity under its use. Celio-vaginal hysterectomy on December 1st, 1889. The recovery was perfect in every respect, and the patient resumed her household duties four weeks subsequent to operation.

Case IX.—L. B., æt. 29 years, married eight years; never pregnant. Has been ill for five years and is gradually getting worse. Her chief complaint is backache and very obstinate constipation; the pains radiate down into the thighs. Menstruation is irregular and profuse. The myoma which is diagnosed fills out the true pelvis, and, former treatment not having been crowned by any marked success, the patient is operated upon by the combined (celio-vaginal) method on December 5th, 1889. The convalescence is interrupted only by an acute bronchial catarrh, to be ascribed to the anesthetic.

Case X.—R. G., æt. 38 years, married fourteen years; three children, normal labors, the last nine years ago. For three years the patient had been complaining of menorrhagia with dysmenorrhea and pain in the pelvis. During one year a tumor had been noticed in the lower abdomen, which gradually increased in size, so that now it reached nearly to the umbilicus. She had lately been unable to attend to her household duties, owing to the increase of pain. On December 29th the abdomen was opened and the entire myomatous uterus removed from above. The operation was readily accomplished in this instance, and required only forty minutes for its completion. Recovery uninterrupted. The highest temperature was reached on the fourth day—101°, with pulse 116. She left the bed on the twenty-third day.

Case XI.—E. S., æt. 35 years, married fifteen years; never pregnant. The family history is good. Menstruation began at 16 years and was regular until 20 years. She had no dysmenor-

rhea until then. Since that age the periods became more profuse, lasting from four to ten days, and the dysmenorrhea became more intense from year to year. During the past five years constant pain existed in the sacral region, the left ovarian region, and, on walking, also in the left thigh. Gynecological treatment was then commenced, which was negative in result. During the two years prior to my seeing the patient constipation had become very obstinate, micturition frequent, and occasionally vesical tenesmus. The abdomen had also increased much in size during the previous few months. Examination of the much emaciated and exsanguinated patient (the bleeding being present now about half of the month) revealed an irregular tumor extending above the umbilicus. Per vaginam it was found that the left half of the pelvis was filled with a tumor, and anteriorly, crowded slightly at the right, was what was considered to be the uterus. The cervix was large and hard. The patient had received eight months' treatment with galvanism at the hands of an electro-therapeutist of this city, without any benefit as far as the pain was concerned; on the contrary, it steadily increased in severity, although the bleeding had diminished very materially. She had also been treated with numerous hypodermic injections of ergotin, and internally with hydrastis canadensis. On January 3d, 1890, the abdomen was opened. The intestines were moderately adherent at the fundus of the tumor, and firmly to the posterior surface of the left broad ligament; the bladder was spread over an extensive area of the tumor. The tubes and ovaries were with considerable difficulty tied off at either side; the tubes were both slightly distended with sero-purulent fluid and their walls much thickened—double interstitial salpingitis. The ovaries had undergone small cystic degeneration. The intestinal adhesions to the broad ligament were so dense that only so much as was absolutely necessary to split the ligament in order to enucleate the tumor from its bed was dissected off. The bleeding from the raw surfaces was sufficiently profuse to necessitate continuous catgut suturing. I had taken care to take off the ligament peritoneum in my dissection, so as to avoid the danger of injuring the gut in any way. The bleeding from the interior of the broad ligament, after splitting it and beginning with the enucleation of the tumor, was very profuse until I was able to tie the nutrient arteries. After great difficulty the intraligamen-

tous tumor was enucleated, and to stop the oozing from the bed iodoform gauze was at once tightly packed into the cavity, and counterpressure made from the vagina by another tightly packed iodoform-gauze tampon. On the opposite side ligatures were also placed and the broad ligament cut, after placing forceps on the uterine side of the ligament. Next the bladder was dissected off sufficiently to permit the placing of a ligature below the tumor, first tying with ligatures to avoid all bleeding, and then the myomatous uterus cut off above the elastic ligature. The intraperitoneal gauze pressure was continued a few minutes longer, and the gauze removed; there still being some bleeding, a continuous suture was placed so as to envelop the folds of the ligament and bring the raw surfaces into apposition, the remainder of intestinal adhesions having been disposed of. Now the vaginal gauze tampon was removed, and, guided by the finger of an assistant, placed directly behind the portio; the cul-de-sac was opened with the scalpel, keeping close to the column. A bullet forceps was now placed in the slit thus made, to act as a guide, the cervix pulled up as much as possible by a volsella, and the cervix cut out, first ligating with catgut before cutting; so that, with the exception of the bleeding from the bed from which the intraligamentous tumor was enucleated, the operation was practically bloodless. The opening in the vagina was now closed, because I could see no necessity for drainage, all oozing having been controlled. Abdominal wound closed with two rows of sutures. Time of operation, one and three-quarter hours. The pulse never exceeded 110 beats and the temperature did not go above 100° F. In three weeks the patient left her bed.

Case XII.—F. K., æt. 41 years, married twenty-one years; never pregnant. Menstruation began at 13 and was regular until marriage. From then on it became profuse, and during the past seven years irregular, the intervals varying from two to three weeks. The pain in the back and abdomen during the past four years had become quite intense, and was but slightly relieved by treatment. The myoma, about the size of a cocoanut, was of a doughy feel, showing muscular tissue to be predominant or that it had undergone other changes. On February 9th, 1890, total abdominal hysterectomy was done. The patient's highest temperature was on the second day, 100°, pulse 108. She left her bed on the eighteenth day.

Case XIII.—J. C., æt. 32 years, married twelve years; no children; one abortion at the third month eleven years previously; meno- and metrorrhagia; abdominal and lumbar pains for nine years. Treatment of various kinds for seven years, with little benefit at times. During the past eight months the pains were much severer. The myoma is of medium size and is complicated with double pyosalpinx. On February 23d, 1890, laparo-vaginal hysterectomy was done. Perfectly smooth and uneventful recovery, the patient assuming full household duties exactly five weeks after operation.

Case XIV.—M. D., æt. 30 years, single. Menstruation began at 14 years. The patient had been in good health until three years prior to her consultation with me, which was on August 20th, 1889. She complained of intense pain in the abdomen which was nearly constant, and of irregular and profuse hemorrhages. At the time of bleeding, and for one to two days previous to the flow, she was compelled to go to bed on account of the severe suffering, for which her attending physician was obliged to give morphia. On examination the abdomen was found to be filled by a solid tumor, which was smooth and extended up to the umbilicus. Over the ovarian regions there was much sensitiveness. Per vaginam there were masses, corresponding to enlarged tubes and ovaries, which were excessively tender to touch. The diagnosis was interstitial myoma and double salpingo-oöphoritis. She was treated by galvanism. The current, however, could *never* be carried beyond fifty milampères. She gradually grew worse, the pain more intense, and bleeding more profuse. Removal of the appendages was finally decided upon. On May 22d, 1890, the abdomen was opened, when the impossibility of removing the adnexa completely became apparent. The left tube was low down, much distended with blood, and the ovary so adherent that it was more than useless to make further attempts to enucleate it. A worse condition than this was presented on the right side. The uterus was then cut, with the hope of being able to enucleate the tumor. This, too, was useless, as the mixed (interstitial and submucous) tumor would have made it necessary to take away so much uterus that a bringing together of the wound would have failed; besides, she would have had the greatly diseased appendages left. The entire organ was finally removed from above, after much difficulty owing to the extreme rigidity of the pelvic floor. The bladder

was wounded during operation. The operation lasted very long —two and a quarter hours—and the patient did not fully rally from the shock. She died on the second day.

Case XV.—E. G., æt. 32 years, married ten years; never pregnant. Menstruation began at 13 years, and had always been profuse and more or less painful, but regular. During the preceding five years the flow had from year to year increased in quantity, lasting now eight to fourteen days; blood frequently in clots, and the pain very severe during the entire flow, beginning one to two days previously. Constipation, frequent micturition, and occasionally vesical tenesmus. She also suffered from pain in the region of both sciatic nerves. On physical exertion there were cardiac palpitation and general lassitude. Examination revealed a tumor extending two fingers' breadth above the umbilicus, hard, smooth, and symmetrical. The cervix was small. Diagnosis, interstitial myoma. In October, 1889, after splitting the cervix, she was curetted and an application of pure carbolic acid made to the interior, and the uterine cavity packed with iodoform gauze to check the hemorrhage. One week later galvanism was commenced, and the patient was treated regularly twice to three times per week until the latter part of April, 1890, without any benefit as to pain or bleeding. On May 25th, 1890, laparatomy was done and the adnexa readily removed. The broad ligaments were sutured down to the base of the tumor and cut, a rubber ligature applied, and the tumor amputated; the finger of an assistant was placed firmly against the posterior surface of the cervix, the vagina was pierced, and a long sponge-holding forceps introduced through the slit per vaginam. The cervix, after ligating successively and cutting, was now excised; the bladder was, after cutting a little above its upper attachment to the cervix, dissected off with the finger, as in vaginal hysterectomy, down to the vagina, which was cut with the knife, the cervix being well drawn up with a volsella. No ligatures were applied anteriorly. An iodoform gauze drain was placed in the cavity so as to introduce it into the vagina, and the abdomen closed. Time, fifty minutes. On the second day the gauze was removed and an iodoform gauze vaginal tampon substituted, which was removed on the third day. The highest temperature was 99° F., pulse 100. The patient left her bed on the twentieth day, and resumed her household duties with the beginning of the fifth week.

Case XVI.—A. P., æt. 32 years, married thirteen years; never pregnant. Three years before the patient began to have meno- and metrorrhagia, and noticed the presence of an abdominal tumor. The bleeding remained profuse, despite any treatment instituted, so that at the time the operation was done —viz., on October 4th, 1891—she was extremely anemic and had a very feeble and rapid pulse. It was a large, soft myoma, and the case seemed favorable for the complete removal of the organ. The patient did not fully recover from the shock of the operation, which lasted one hour and fifteen minutes and was done per abdominem alone.

Case XVII.—J. S., æt. 40 years, married; never pregnant. Had a large myoma in the anterior uterine wall. For five years she had suffered from intense pain in the abdomen, profuse and painful hemorrhages. She was very anemic from the loss of blood. The pain was largely due to double pyosalpinx and a small intraligamentous cystoma. On January 30th, 1892, complete extirpation of the uterus was done by the abdominal method. Death resulted at the beginning of the third day from extreme anemia, no evidence of peritonitis or sepsis being shown either before or after death.

Case XVIII.—C. J., æt. 42 years, married; one abortion; no children. The abdominal tumor was observed two years previously, and gradually increased in size. The tumor involved the cervix, and caused intense pressure symptoms in addition to the bleeding. On May 16th, 1892, removal of the myomatous uterus was done. With the patient in lithotomy position, I first ligated and cut the base of the parametria, then opened the cul-de-sac, and anteriorly also separated the bladder as far as possible, hoping thereby to be enabled to finish the operation from above without so much difficulty, as the pelvic floor was very rigid. Death occurred from shock a few hours subsequent to operation.

Case XIX.—B. W., æt. 36 years, single. Interstitial submucous myoma. Had been bleeding profusely for two years, which could not be controlled by any method of treatment. On May 28th, 1892, the myomatous uterus, reaching nearly to the umbilicus, was extirpated from above, after first doing the preliminary work as in the previous case. The operation was perfectly smooth and promised a good result, but, as in a pre-

vious case, the patient died from the extreme anemia within thirty-six hours after operation.

Case XX.—M. McD., æt. 54 years, married twenty-eight years. Had seven children and two abortions; the latter were respectively at three and a half and four months' gestation, cause unknown. All labors were normal, the last one twenty years ago. Nine years ago the patient first noticed a tumor in the lower part of the abdomen, about which she consulted a physician. Inasmuch as she had had no menstrual disturbances of consequence, and only a heavy sensation in the lower part of the abdomen, she was advised to let the tumor, which was diagnosed as a fibroid, alone. At 51 years the menopause took place, and the patient felt quite comfortable until one year ago when the growth in the abdomen commenced to give her considerable discomfort by causing pain in the back and abdomen. During the past two months considerable bleeding again made its appearance, and the tumor also had increased in size. Examination showed a well-marked tumor extending to within three fingers' breadth of the umbilicus, symmetrical, and hard in consistence. The perineum was lacerated nearly to the sphincter, and a descensus of the vagina was present. The cervix was large, lacerated on both sides, and patulous. An examination of the scrapings obtained with a sharp curette showed the utricular glands at some places partly destroyed and nests of epithelia filling the gaps, with only a moderate amount of connective tissue.

Diagnosis, myo-fibroma with carcinoma of the endometrium. Operation July 1st, 1892. After packing the uterine cavity with sublimate gauze and closing the os externum with two silk sutures, the vaginal insertion was cut anterior and the bladder separated as high up as it could be done from below; next the cul-de-sac was opened and the base of the parametria ligated and cut; next the vagina was packed with iodoform gauze. The abdominal section was made to within an inch of the umbilicus, the tumor dislodged, the adnexa removed, and the tying off of the broad ligaments proceeded with. The rest of the bladder was readily separated, after first slightly distending it with boric-acid solution to show its outlines. After ligating, the cervix was excised without difficulty. The edges of the vaginal wound were brought together and the abdomen closed. After forty-eight hours there was some elevation of temperature to

101.8° in the axilla and considerable tympanites. Six seidlitz powders, given at intervals of half an hour, brought about copious watery stools, and the temperature went down, tympanites disappeared, and the patient made a good recovery.

Case XXI.—L. F., æt. 31 years, married five years; never pregnant. Had the usual train of symptoms accompanying a fibro-myoma which produces pressure; one tumor, although not very large, reaching to two fingers' breadth below the umbilicus, and being in the anterior wall of the uterus. Another tumor, however, had developed between the folds of the left broad ligament, and this latter gave rise to the serious symptoms.

On October 24th, 1892, the operation was performed. It was of unusual difficulty, despite the fact that the base of the parametria had already been ligated and cut. The intraligamentous tumor was enucleated with the utmost difficulty. Abdominal and pelvic toilet as previously described. The patient developed a mural abscess, which undoubtedly was due to the silk, as several abdominal sections done about the same time, in which silk from the same lot was used, also got stitch-hole abscesses. Aside from this occurrence, the recovery was ideal. The highest temperature until the fourth day was 99°. From this time, of course, the temperature increased somewhat; it was, however, due to the condition referred to.

Technique of Operation.—The patient is prepared in the ordinary way with which all experienced operators are familiar—the abdomen, the vagina, external genitals, etc., as for a vaginal hysterectomy—and then the operation is commenced from below, if the case is suitable for this, by ligating the parametria as high up as possible, in the same manner as in vaginal hysterectomy for cancer,[1] except that we do not ligate far away from the cervix. The vagina is likewise detached anteriorly and posteriorly from the cervix, and the bladder detached as far as can be done without unusual exertion, the cul-de-sac of Douglas being opened first or last, whichever is most convenient. No rule can be laid down; the operator must use his judgment as to which step should be taken first. The object to be attained is to free the lower segment of the cervix, then the operation from above is materially simplified; this becomes especially apparent in cases where the pelvic floor is rigid. Now the vagina is packed with

[1] See American Journal of Obstetrics, October, 1892.

iodoform gauze, a strip of which protrudes into the peritoneal cavity by way of the cul-de-sac.

Next the abdominal section is made in the usual way, and the rest of the uterine attachments are tied off in sections and cut. To avoid injury of the bladder, the viscus, just prior to its detachment above, especially if it is spread over the tumor itself, should be partly distended with a mild boric acid solution to show such attachment; then, about half an inch above the attachment, whether it is only at the utero-vesical fold or to the tumor, an incision is made and the remainder of the bladder is separated.

After excision of the myomatous uterus the vagina and floor of the pelvis are *closed;* all that can be seen from above is the continuous catgut suture with which the pelvic peritoneum has been closed, and a few small pedicles from the upper parts of the broad ligaments, the adnexa, it is self-understood, having been ligated off at the beginning of the abdominal work, or as soon as was practicable. The abdominal wound can now be closed.

In large tumors which do not crowd into the pelvis, but, on the contrary, pull the cervix and vagina high up toward the upper part of the pelvic cavity, so that the portio can hardly be reached by the examining finger, this technique is out of question and the whole work must be done from above. But in this latter class the operation from above only, offers no particular difficulty; it is, in fact, a comparatively easy operation, decidedly easier than most operations for the removal of suppurating adnexa. The parametrial stumps are secured in the same manner by our successive ligation from above. The floor of the pelvis is closed off in precisely the same way; the only difference is, the cul-de-sac of Douglas is opened per celiotomy wound, which, however, may also become more expedient in the cases in which I advise the work to be done from below. It may be that in some such cases the opening cannot be readily made into the peritoneal cavity after the vaginal mucosa has been cut; then I would never exert myself endeavoring to accomplish it, as the vagina has already been separated *all around* the cervix. The peritoneum is easily opened subsequently. I have, however, always succeeded without difficulty in opening the cul-de-sac from below.

It must be obvious that in the cases in which we have the

pelvic floor rigid—which is more apt to be when we have the class of tumors which crowd into the pelvis and produce pressure symptoms—and the tumors developed between the broad-ligament folds, not only time but much tedious and difficult work is saved if the work is commenced as I have described. The only requisite for operating in this way is practical familiarity with vaginal hysterectomy. My idea of clamps and ligatures with an open wound is the same as it was expressed in the article referred to in vaginal hysterectomy. I should not employ clamps, unless time was an important element in the respective case. The observation of the position and dimensions of the neoplasm in relation to rigidity of the pelvic floor I have made in nearly every case. In the first few cases of hysterectomy I thought the difficulties were only incidental concomitants with the respective case, but repeated observation has taught me differently. More especially does my observation prove to be correct in the smaller tumors. I beg, therefore, to formulate the following rule as an indication for my technique: If the tumor is of small size (not larger than a new-born infant's head), crowding down into the true pelvis; or if there is an intraligamentous tumor; if the portio vaginalis, in consequence of such crowding from above, is low in the vagina, so that it is easily palpated, we have reason to believe that the pelvic floor is rigid; and if the vagina is sufficiently spacious to work in, the operation can be done as indicated with greater advantage. During convalescence the patients operated upon according to the technique which I advise will of course have a vaginal discharge, more or less profuse and usually more or less offensive, which is due to the sloughing off of the parametrial stumps constricted by sutures in the vagina. In addition, then, to the vaginal douches, if such are used, we will do well to call into use the application of occlusion pads. An occlusion pad made of wood wool, and sold by the Jaros Hygienic Underwear Company, of New York, is excellent. It answers the purpose for which it is intended—viz., to absorb discharges from the generative organs—better than any other in the market, and it is cheap. To deviate from the subject momentarily, let me say that these pads are also admirable for use after parturition and during menstruation. They can be readily sterilized in any household by wrapping them in heavy paper, or putting them in a clean tin box, and putting the

package into the oven. Any one who has once used an occlusion pad for these purposes can appreciate its value.

The advantages of the *complete* removal of the uterus are no doubt apparent to many operators. Although I cannot bring myself to the rule to always do this operation, especially after the experience which I have had in very anemic patients, yet, when the condition of the patient permits a long operation, it is my choice. Occasionally we have a patient whose physical condition is very poor, she has become anemic from loss of blood, the heart in consequence has probably suffered more or less. In such cases I will still do suprapubic hysterectomy, because that is generally a rapid operation; opening the abdomen, dislodging the tumor, and putting the wire around the cervix require but a short time; to amputate the uterus, sewing the peritoneum on to the stump below the wire, also takes up but a very short time, and then the abdomen can be rapidly closed. However, it is only in extreme cases in which I would yet do an operation by this method, or, for instance, as in a case which I had two weeks ago in a patient æt. 66 years, in which the vaginal canal had become completely occluded.

The method of treating the stump intraperitoneally varies in details with nearly every operator, but the fundamental principle is the same, and if I can make a more rapid operation by one procedure than by another, with equally satisfactory result, that is the method of choice. The method employed by me is very simple and comparatively rapid. Tying with heavy catgut ligatures on either side; next to the myomatous uterus long clamps are placed, cutting between ligature and clamp; at the lower segment of the uterus the peritoneum is cut around and the familiar cup-shaped cavity cut out, including the upper part of the cervical canal; the raw surfaces are then united by a continuous buried catgut suture, as introduced by Schröder, and the broad ligaments are brought into apposition with the stump. From the description it would seem that this procedure would occupy much time: it does not; ordinarily such operation can be completed in three-quarters of an hour. From the above it becomes apparent that the case is not fitted to the operation, but the operation to the case, inasmuch as I also take into consideration, besides the physical condition of the patient, the relation of the myoma to the uterus and in the pelvis. This holds good for tumors of the uterus; but, as Fritsch very correctly stated in

his remarks on the subject of operations for myoma before the International Medical Congress in Berlin, we have another variety of myo-fibromata which offers an entirely different aspect, both in regard to the necessity of an operation and the difficulties encountered in such operation, and the prognosis—namely, the tumors developed in the folds of the broad ligaments. In that address Fritsch also remarked that these intraligamentous myomata had a tendency to grow rapidly. This statement, although correct for many cases, is not the rule. I have at the present time three such cases under observation for more than three years, and apparently the tumor has not grown; but I find that such patients suffer at intervals from attacks of perimetritis—such has been my observation in the three cases referred to. These intraligamentous fibromata are decidedly the most difficult cases to manage, especially if they have attained a large size.

The principal reason why I have left off doing suprapubic hysterectomy in cases in which I deem it safe to do another operation is on account of the long convalescence, and the great risk of a hernia at the lower angle of the wound. The time of a patient in moderate circumstances is of great importance, and if we can save her four weeks, besides the greater risk of a hernia, it should be appreciated. And, in addition, the danger of infection from the stump is a considerable item; the latter factor, in addition to hemorrhage, is the feature against the intraperitoneal treatment of the pedicle. In opening the cul-de-sac in complete hysterectomy entirely from above we should endeavor to make the incision high, close to the cervix, so as to facilitate the ligation around the cervix. A great difficulty is presented when the pelvic floor is rigid, and it is for this class of cases that I advise to begin per vaginam; but if the operator does not feel inclined to do so, he will still find it to greater advantage to amputate above and remove the cervix from below, applying clamps to the parametria. The technique, in short, must be left to the choice of the individual operator. The point is to take away the entire organ. It will also be found of advantage to operate with the patient in pelvic elevation, preferably on a table constructed so that any degree of pelvic elevation can be readily given without loss of time or inconvenience to the operator, which can be done most readily on the table constructed for me by R. Kny & Co., of New York. That the operation is of unusual merit must already be conceded by the fact that it is

rapidly gaining in favor with all operators who have done it several times. The only objection which seems to be present is the long time frequently required to complete the operation; yet the time can be much shortened, according to the dexterity of the operator in using the needle. A. Martin's time, for instance, for thirty operations published, was only forty-six minutes. In one case he only required nineteen minutes. One of the other objections that have been offered is that the pelvic floor is too much weakened by the complete operation. This cannot hold good in practice, as is shown by the very large number of vaginal hysterectomies already done without ill effects to the pelvic floor. This is especially proven by the patients upon whom I have performed hysterectomy for cancer. They usually leave their bed on the fourth day, and attend to their usual avocations *within* two weeks.

Another point to which I beg to call attention is that nearly all operators speak of the good drainage procured by total extirpation, and one of Dr. Baer's objections to complete hysterectomy is "the necessity of drainage." I too have used drainage with iodoform gauze in the majority of my cases, the same as I formerly did in vaginal hysterectomy; but the fact that no drainage is ordinarily required is an important argument in favor of the operation. I have lately abandoned it, in the same way that I have cast aside gauze or any other drainage in vaginal hysterectomy for cancer. *We do not require it*, if the operation has been neatly and aseptically done. That I have lost several patients by the method of operating is certainly not due to the non-drainage. The autopsy showed not the slightest evidence of sepsis. In my fourteenth case only, may a suspicion of sepsis be had, owing to the length of time that elapsed between operation and death, and also that no autopsy could be obtained to ascertain more definitely what the condition was.

Permit me also to repeat that nothing but catgut is used for anything during the operation, except in the closure of the abdominal wound.

An additional fact which must be taken into consideration is the cause of death, when it occurs. The most prominent cause of death either by the intra- or extraperitoneal treatment of the stump is septicemia. This cause is nearly certain to be eliminated by complete hysterectomy, if the operator is careful in asepsis. In intraperitoneal treatment secondary hemorrhage

plays an important rôle in causing death. It has been proven in practice that this need not be feared if the ligatures are properly placed in complete hysterectomy. The main cause of death in complete hysterectomy is shock or extreme anemia, and for that reason I have, as previously stated, not bid adieu invariably to the extraperitoneal treatment. In four *successive* cases in which I risked this cause I have had reason for regret, and shall make no more attempts to do a complete operation when the patient is so much reduced from previous loss of blood.

51 West 52d street.